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AUTHOR White, Linnea
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ABSTRACT

A research study examined what behaviors faculty members valued in undergraduate students at Iowa's Drake University, as well as what general competencies faculty members feel an undergraduate should attain. A questionnaire sent to 364 faculty members with direct student contact asked their ratings of 111 behaviors in evaluating their students. A total of 145 persons completed the questionnaire for a return rate of 39.9 percent. Eighteen factors were chosen to represent the competencies or skills which integrate or most closely capture the underlying theme of the behaviors. Analysis of the results showed that among the most important behaviorally-defined factors that faculty looked for in evaluating their students was behavior that revealed strong personal development such as identifying values and seeking information and experiences relevant to self-definition; an aptitude for research activities indicated by the ability to conceptualize relationships and develop theoretical frameworks; conscientiousness; and self-confidence. However, because 60 percent of the faculty were not represented in this survey, these findings may not only be unrepresentative of Drake University students as a whole but would probably not totally apply to students at other universities. Yet, the research method is one that any institution of higher education might usefully employ to help design educational programs and activities that develop those performances and characteristics which are most desired. Contains 27 references. (GLR)

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Undergraduate Competencies Which Faculty Value

Linnea White

Linnea White is an Assistant Professor of Education at Creighton University, Omaha, Nebraska.

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Concern about the quality of education in this country has progressed from a focus on elementary and secondary schools to a focus on higher education as well (A Nation at Risk 1983, Bok 1986). Assessment and accountability have become keywords in the debate about quality (Mingle 1986, Marchese 1988).

All of the ferment about quality, accountability and assessment lead inevitably to the question of purposes and desired outcomes of higher education. It is impossible to assess quality and demonstrate accountability in the absence of explicit statements of goals (Dressel 1961).

What is the purpose of higher education? Various purposes and missions are espoused for higher education, depending upon the source. College catalogs often list the development of the whole person and the development of good citizens as the mission of higher education (Schlesinger 1977). The development of competence, autonomy and purpose, enhanced capability for interpersonal relationships, and critical thinking abilities are cited as desired outcomes of higher education by specialists in student development (Chickering 1971).

Students often say they expect to prepare for a career, to grow as persons, to meet friends, and to find someone to marry. Who decides what the purposes

of higher education are? According to Wuest (1977), faculty, employers, parents, and students are all plausible sources. In fact, faculty are most often the deciding body.

If the purpose of education is to produce changes in students, as Paul Dressel alleged as long ago as 1961, then only an evaluation of changes in students can reveal how well those purposes are being served. The first step is to identify the desired outcomes of education in behavioral terms such that evaluation is possible. Much work on conceptualizing the desired outcomes of higher education in terms of the behavior of students has been done by the Western Interstate Commission for Higher Education National Center for Higher Education Management Systems, beginning with Huff (1971) and Micek (1973) and continuing with Peter Ewell's work (1983, 1985).

Competency-based approaches have emerged as one method by which institutions of higher education can clarify objectives and demonstrate accountability (Grand 1979, Nickse and McClure 1981). According to O'Connell and Moomaw (1975), "A competency-based curriculum consists of explicit statements of competencies learners are to acquire, procedures for assessing achievement of competencies, and learning

experiences." They say that the first, most basic step for an institution or program is to "state, clearly, explicitly, and publicly its educational goals and objectives." Spady (1982) describe the first operational component in outcome-based instructional management (in public schools) as publicly determined and stated learning outcomes for all students.

This article reports on research which addresses this question: what general competencies should undergraduates attain? It also reports on a research method which an institution could use to determine what behavior faculty members value.

Research Goal and Framework

The purpose of this research was to identify the commonalities in what faculty value as desired characteristic behaviors for undergraduate students. The first research objective was to identify those factors which are already used by faculty in their evaluation of undergraduate students. The second objective was to assess the differences between instructional faculty, administrators, and student life staff in the importance given to particular factors. The third was to determine if there were differences among the colleges, or by academic rank or gender, in the valuing of the factors.

Performance evaluation, particularly its application in educational settings by Gerald Whitlock (1964, 1965), provided the conceptual framework and methodology for this research. Performance evaluation includes the following principles: (1) expected performance is defined in observable terms, (2) evaluation is based on performance of the relevant tasks that compose the role in question, and (3) criteria for evaluation are specified in advance. Performance evaluation has been used to define expected performance, to evaluate performance by individuals, and to give necessary feedback to facilitate improvement in performance (Whitlock 1965).

Whitlock used this method at the University of Tennessee to define the performance expected in the role of "teacher" in a university setting and developed an instrument for student evaluation of teaching, based on visible behaviors.

Performance specimen is the term applied to behaviors which result in a judgmental response, either positive because the behavior is associated with successful performance, or negative because the behavior is associated with unsuccessful performance.

Research Method

The first phase was the identification of the behaviors which characterize the outstanding Drake University undergraduate student. Structured interviews with a stratified random sample of fifteen instructional faculty, two administrators and one student life staff member were used to generate performance specimens associated with the successful performance of the role of undergraduate student. The interviewees were handed this statement:

> "Think of a time when you saw a Drake student do something in class or out of class, such that when he or she did it, you said to yourself, there is an example of an uncommonly good student; what did he or she do?"
>
> "Second, what are the behaviors or competencies which you believe should characterize every Drake graduate?"

The interviewees were asked to describe as many incidents of desirable student behavior as they could remember in the half-hour interview. The interview process resulted in more than 800 behavioral statements. A survey of the literature of student development in higher education resulted in the

addition of a few more desired behaviors not already mentioned. These statements were sorted and categorized by three staff members in the Student Counseling Center at Drake University, including the author. Similarity of ideas was the criterion for the categorizing process. The 111 items included in the questionnaire were chosen to represent the whole domain of ideas.

This questionnaire was sent to the 364 general faculty with direct student contact at Drake University. A total of 145 persons returned the completed questionnaire, representing a return rate of 39.9 percent. Of these, 108 were instructional faculty, 18 were administrators, 13 were student life staff, and 6 were general faculty not associated with a particular division.

The respondents were asked to indicate on a five-point scale which of the 111 behaviors were important in their own evaluation of their students.

Analysis

The BMD factor analysis program (Dixon 1985) was used to analyze the data, with a principal components method and varimax rotation. Twenty-four factors had eigenvalues of 1.0 or more. Eigteen accounted for two

percent or more of the variance. Using both criteria, eighteen factors can be interpreted. Table 1 is a summary of the factor names, the number of items loading above a 3.0, the percentage of variance accounted for by each factor, and the cumulative variance.

Insert Table 1 Approximately Here

For the analysis of variance, faculty from continuing education and law and persons not associated with any division were eliminated. The remaining totals were faculty, 86, administrators, 14, and student life staff, 10.

A one-way analysis of variance was used to compare the classification status within the sample, instructional faculty, administrators, and student life staff. Factor scores for each respondent were analyzed with two-way analysis of variance to determine the effects of college by academic rank on the valuing of each factor and the effects of academic rank by gender on the valuing of each factor.

Research Results

Eighteen factors were identified and labeled as follows: Personal Development, Research Activities,

Conscientiousness, Self-Confidence, Student Activities and Community Service, Oral Communication Skills, Questioning, Basic Knowledge and Skills, Problem Solving, Curiosity, Independent Thinking, Commitment to the Discipline, Goal-Directed Behavior, Computer Skills, Initiative, Group Process Skills, Commitment to Learning, and Critical Thinking. The factors and the five items which loaded most heavily on each are listed in Table 2.

Insert Table 2 Approximately Here

In each case, the names of the factors were chosen to represent as fully as possible the competencies or skills which integrate or most closely capture the underlying theme of the behaviors.

Each factor is defined precisely by the behavioral statements which comprise it. In this context, Personal Development is not an abstract concept unanchored in visible performance. Personal Development is defined in statements of behavior referring to identifying values, examining elements of personal identity and seeking information and experiences relevant to self definition. The factor, Personal Development, accounted for 19.1 percent of the

variance in faculty responses. It is, then, by far the one element most important to the respondents when they evaluate students.

The second factor, Research Activities, contains items which indicate conceptualizing relationships among ideas, developing a theoretical framework, and reading journal articles, as well as items relating to conducting research. The second factor accounted for 9.2 percent of the variance.

The third factor, Conscientiousness, includes attending class, keeping up with assignments, displaying interest in class, following instructions carefully, and trying to do the best possible job. This factor accounted for 5.5 percent of the variance. Examination of Table 2 will show how each of the factors was defined in behavioral statements.

The analysis of variance by status, instructional faculty, administrators, and student life staff revealed significant differences in the valuing of three factors: Personal Development, Research Activities, and Student Activities and Community Service. Table 3 shows the factors, probability of the F statistic, and the group means.

Insert Table 3 Approximately Here

Subsequent t tests were conducted to determine which pairs were significantly different. Administrators did not significantly differ from faculty. Student life differed from faculty on Personal Development and Student Activities at the .01 level and on Research Activities at the .001 level. Student Life differed from administrators on Personal Development and Research Activities at the .05 level. Examination of the means indicates that Student Life positively valued Personal Development and Student Activities. Faculty positively valued Research Activities.

The analysis of variance by college and professorial rank produced significant differences by college on two factors: Student Activities and Community Service and Computer Skills. No significant differences by professorial rank were found and there were no interactions between college and rank. Table 4 shows the factors, probability of the F statistic, and the group means.

Insert Table 4 Approximately Here

T tests indicated that on the factor of Student Activities and Community Service, Fine Arts was significantly different from Business, Education, Liberal Arts and Pharmacy at the .01 level. Fine Arts faculty strongly rejected Student Activities. Pharmacy was significantly different from Liberal Arts at the .05 level. Pharmacy valued Student Activities.

On Computer Skills, Business was significantly different from Education and Fine Arts at the .01 level and from Liberal Arts and Pharmacy at the .05 level. Journalism was significantly different from Education, Fine Arts and Pharmacy at the .05 level. Business and Journalism faculty positively valued Computer Skills.

The analysis of variance of professorial rank by gender produced significant differences by gender at the .01 level for one factor: Oral Communication Skills. Analysis by professorial rank produced no differences and there was no interaction. Table 5 shows the factor, the probability of the F statistic and the group means. Male faculty valued Oral Communication Skills while female faculty did not.

Insert Table 5 Approximately Here

Interpretation of Results

The respondents rated 111 statements of the behavior of students in terms of how important each behavior was in their own evaluation of students. The factor analysis identified the patterns in the data, isolating the clusters of items which became the factors. The factors thus summarize what characteristics are important to the general faculty.

Because the factors are based on what faculty at Drake University highly value in their students, all of the factors taken as a whole could be interpreted as a comprehensive statement of desired outcomes of higher education, as preferred at Drake University.

The differences indicated among colleges suggest that faculty in each department and each college may value these factors and behaviors slightly differently. Also, this method captures only those factors in common; every department may in addition have specialty areas of performance which are equally important.

Limitations

These research results are based on a return rate of 39.9 percent, which means that 60 percent of faculty did not participate in formulating the factors. Their opinions may differ from those reflected by the respondents.

A second limitation is that only faculty at Drake University in Des Moines, Iowa, were respondents. Generalization to other colleges and universities would have to be done cautiously. Comparison to other colleges, however, can be done.

Comparisons

The faculty of several institutions of higher education, notably Alverno College (Mentkowski and Doherty 1984), James Madison University (Marchese 1988), and Northeast Missouri State University (Osigweh 1986, Taylor 1985) have arrived at lists of desired outcomes of higher education at their institutions through extensive processes of faculty discussion and consensus. Yale University (Tabor and Hackman 1976, Hackman and Tabor 1979) has completed an extensive research project which identified types of students attending Yale and desired competencies.

The following chart compares the desired competencies identified by these various institutions with the results of this research. The factors in the research were grouped by similarity, to facilitate comparison.

Insert Table 6 Approximately Here

In this research, Personal Development includes ideas about identity, values, management of feelings, personal relationships, openness to experience, and ethics. Three of the four institutions cited had some statement relating to values or affective development. Self confidence was directly mentioned by Northeast Missouri State. Social interaction, interpersonal skills, interpersonal responsiveness and sociability were the names given to relationship skills. These categories are broader than the Group Process factor from the research. All institutions had an identifiable parallel with the general category of critical thinking and problem solving. This research divided that category into several parts: Questioning, Problem Solving, Independent Thinking, and Critical Thinking.

The commonalities in desired outcomes across institutions and research are apparent from a perusal of the chart. Personal development, interpersonal development, critical thinking and problem solving, communication skills, and student involvement/citizenship are endorsed. The results of this research are most similar to the results of the Yale studies of desired outcomes.

A further much more detailed comparison of desired outcomes at institutions which have identified them is highly desirable but beyond the scope of this article. Such a comparison could be used as a starting point for faculties at institutions which are now beginning the process of specifying desired outcomes.

One of the great concerns in the implementation of competency-based education has been that easily defined and easily measured outcomes would be institutionalized and more difficult and amorphous ones would be ignored in teaching and assessment (Bok 1986). The institutions cited have grappled with defining difficult areas, seeking to include the whole domain of valued outcomes. So, too, this research has spelled out, for example, numerous behavioral referents for Personal Development; these behaviors are visible and countable.

This research method is one which any institution of higher education could employ to generate local performance specimens through interviews, to question faculty regarding their current valuing of behaviors of students, and to formulate a tentative listing of competencies which are behaviorally defined. Any such listing would then need to be discussed and modified by as wide a representation of faculty as possible in

order to be accepted and used. However, the research base would offer credibility and would provide a basis for discussion, saving faculty time.

Identifying desired outcomes is one way of determining what a core curriculum should be. A description of desired student competencies could serve as a model against which students could measure themselves. Faculty could assess educational programs for their contribution to the development of the desired performances by students. If expectations of performance are made explicit, then educational programs and activities could be chosen which develop those performances and characteristics which are most desired.

The conversation between Alice and the Cheshire Cat from Lewis Carroll's Alice in Wonderland (Dodgson 1965) illustrates in a humorous way the importance of identifying desired outcomes.

> "'. . . Would you tell me, please, which way I ought to go from here?' asked Alice.
>
> 'That depends a good deal of where you want to get to,' said the Cat.
>
> 'I don't care much where---' said Alice.

'Then it doesn't matter which way you go,' said the Cat.

'---so long as I get somewhere,' Alice added as an explanation."

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TABLE 1

Factor Names	Number of Items Loading above 0.3	Percent of Variance Accounted For	Cumulative Percent of Variance
Personal Development	63	19.1	19.1
Research	29	9.2	28.3
Conscientious	13	5.5	33.8
Self-confidence	11	5.4	39.2
Student Activities	11	4.3	43.5
Oral Communication	7	3.3	46.8
Questioning	9	3.2	50.
Basic Knowledge	7	3.1	53.1
Problem Solving	5	2.9	56
Curiosity	9	2.8	58.8
Independent Thinking	4	2.4	61.2
Committed/ Discipline	3	2.4	63.6
Goal-directed	4	2.3	65.9
Computer Skills	4	2.2	68.1
Initiative	7	2.2	70.3
Group Process Skills	4	2.1	72.4
Committed/ Learning	3	2.0	74.4
Critical Thinking	6	2.0	76.4

TABLE 2
Factors and Items Loading on Them

Personal Development

0.826 Shared feelings and thoughts about who she was as a person when it was appropriate to do so

0.809 Thought about and talked about the type of personal relationships that he wanted

0.790 Sought opportunities to learn about himself, asking "who am I?" questions and seeking tentative answers

0.779 Articulated a personal philosophy with values, life goals, and an idea of the meaning of life

0.747 Paid attention to his feelings as information relevant to contemplated behavior or to decisions about future plans

Research Activities

0.835 Willingly carried out undergraduate research projects and field work

0.824 Looked through journal articles and abstracts for ideas to apply to what he was doing

0.762 Involved herself in independent research activity

0.708 Developed ideas on his own and presented them to his instructor

0.556 Conceptualized about the relationships in the material, between events, ideas, and meanings

Conscientiousness

0.804 Attended class regularly

0.666 Displayed interest and friendly attention in class

Table 2 (continued)

Oral Communication Skills

0.726 Regularly participated in the active discussion of material

0.650 Presented ideas fluently and persuasively in class discussions and speeches

0.592 Consistently read the material before coming to class to discuss it

0.372 Developed effective oral communication skills

0.368 Asked good quality, thought-provoking questions in class

Questioning

0.693 Asked questions in class if she perceived an error or discrepancy in the instructor's presentation

0.522 Treated faculty as a resource for learning, rather than as an authority

0.431 When she asked the instructor for help, came prepared with specific questions

0.389 Respected her own opinions and values enough to disagree with others, especially others in authority positions

0.388 Supported a position or conclusion with facts and logical reasoning

Basic Knowledge and Skills

0.842 Mastered the basic facts and concepts of the discipline

0.438 Supported a position or conclusion with facts and logical reasoning

0.427 Demonstrated effective writing skills in papers and on tests

Table 2 (continued)

0.640 Managed time effectively so that he kept up on assignments in classes most of the time

0.596 Listened carefully to the instructions and followed instructions

0.564 Tried to do the best job she could, whatever the task was

Self-Confidence

0.689 If she made an error, she was quick to acknowledge it and correct her mistake

0.617 Displayed enthusiasm about what he was doing

0.592 Approached tasks believing she could achieve successfully whatever she set out to do

0.537 Did his work without needing constant reassurance and approval

0.503 Maintained a cheerful attitude while doing the work, even if it was boring or unpleasant work

Student Activities and Community Service

0.700 Involved herself in student activities and university-wide activities

0.636 Invested time in volunteer work or community service projects for the benefit of others

0.604 Identified with the university and worked to promote Drake University's welfare

0.529 Spent a lot of time with faculty and in the departmental office because he was interested in what he was doing and in the discipline

0.464 Formed friendships with other students

Table 2 (continued)

0.424	Checked his own work carefully for accuracy and completeness
0.353	Listened carefully to the instructions and followed instructions
Problem Solving	
0.867	Practiced problem solving skills, identifying the question, identifying the data, analyzing the relationships, and formulating conclusions
0.426	Critically evaluated the material she read and the material presented in class
0.324	Asked "if then" questions, showing that he had been thinking about the concepts and analyzing relationships among them
0.321	Facilitated the work of a group of students, by summarizing, staying on task, encouraging participation, checking for decisions, etc.
0.313	Examined her own learning process, how she learned, how she perceived ideas and people, and sought to enhance that process
Curiosity	
0.627	Read some books for pleasure and talked about them
0.489	Developed interests outside of his specialty or discipline
0.478	Displayed great curiosity about ideas and people
0.460	Manifested passionate commitment and enthusiasm for her discipline

Table 2 (continued)

0.403 Used a variety of approaches, displaying flexibility and openness

Independent Thinking

0.735 Figured out, on his own, what needed to be done to solve a problem or complete an assignment

0.353 Displayed a willingness to risk by trying a new approach, expressing himself, or tackling a difficult problem

0.350 Applied ideas and principles to a new situation, going beyond what had been presented in class or in the text

0.340 Approached tasks believing she could achieve successfully whatever she set out to do

Commitment to the Discipline

0.732 Helped out the faculty with whatever needed doing

0.541 Shared opinions with others about the significance of their discipline or their future work in the discipline to society

0.414 Planned his own program of study and brought that plant o his advisor for consultation

Goal-Directed Behavior

0.772 Maintained a high grade point average

0.488 Persisted in overcoming whatever obstacles appeared which might prevent his reaching his goals

0.319 Identified career goals and worked toward their realization

Table 2 (continued)

0.314 Identified the personal changes and goals she wished to reach through a university education and chose classes and activities accordingly

Computer Skills

0.845 Developed skills in the use of computers

0.464 Developed a specialty within his discipline

0.399 Sought help when he had difficulty, not just before an exam

0.305 Identified career goals and worked toward their realization

Initiative

0.549 Identified resources that she would need and went after them

0.518 Sought out experiences with a variety of artistic forms

0.450 Developed a theoretical framework and acted consistently within that framework in the laboratory or in a project

0.399 when she asked the instructor for help, came prepared with specific questions

0.392 Checked his own work carefully for accuracy and completeness

Group Process Skills

0.687 Gave straight accurate feedback to fellow students, negative as well as positive

0.418 Facilitated the work of a group of students, by summarizing, staying on task, encouraging participation, checking for decisions, etc.

Table 2 (continued)

0.352	Genuinely cared about their students
0.352	Shared the "speaking time" in a class or group session with the other participants
Commitment to Learning	
0.832	Attempted to learn everything that was presented
0.340	Spent a lot of time with faculty and in the departmental office because he was interested in what he was doing and in the discipline
0.338	Applied ideas and principles to a new situation, going beyond what had been presented in class or in the text
Critical Thinking	
0.502	Thought logically about ideas and demonstrated his logic in papers and in classroom discussions
0.475	Asked "if then" questions, showing that he had been thinking about the concepts and analyzing relationships among them
0.402	Consistently engaged in taking action toward her own goals, rather than being a passive receptor
0.321	Planned his own program of study and brought that plan to his advisor for consultation
0.310	Used feedback and criticism to improve rather than shutting it out or taking it personally

Table 3

	Significance of F	Group Means		
		Faculty	Administrators	Student Life
		N=86	N=14	N=10
Personal Development	.0089	-0.1116	0.1014	0.9032
Research Activities	.0027	0.1452	0.0292	-0.9910
Student Activities	.0177	-0.1203	0.3847	0.6989

Table 4

	Significance of F	Group Means					
		Business	Education	Fine Arts	Journalism	Liberal Arts	Pharmacy
		N=16	N=15	N=8	N=5	N=34	N=6
Student Activities	.0060	0.1635	-0.1130	-1.2011	-0.2463	-0.0968	0.6569
Computer Skills	.0035	0.5695	-0.3781	-0.7973	0.7868	-0.0743	-0.3139

Table 5

	Significance of F	Group Means Female N=22	Male N=67
Oral Communication	.0080	-0.3954	0.1506

TABLE 6
Comparison of Desired Competencies

Research Drake U.	Alverno College	James Madison	Northeast Missouri	Yale University
Personal Development	Valuing	Affective Development		Personal Growth
Confidence			Confidence	Interpersonal
Group Process	Social Interaction		Interpersonal Skills	Responsiveness Sociability
Critical Thinking	Analytic Abilities	Critical Thinking		Cognitive Proficiency
Problem Solving	Problem Solving	Problem Solving	Problem Solving	Intellectual Growth
Questioning				
Independent Thinking				
Research				
Activities and Community Service	Citizenship		Functioning In a Larger Society	Participation in Organizations
Communication	Communication	Writing		Communication
Basic Knowledge		Assessment In Major	Knowledge	

Table 6 (continued)

Research Drake U.	Alverno College	James Madison	Northeast Missouri	Yale University
Curiosity				Intellectual Perspective Curiosity
Initiative				Self-directed Behavior
Conscientious Goal-directed Behavior Committed/ Discipline Committed/ Learning		Degree of Challenge		Academic Effort and Achievement Career Goals
Computer				
		General Liberal Studies	Cultural Awareness	Discrimination Issues
	Aesthetic Responsiveness			Creative Performance Artistic Performance
	Responsibility for Global Environment			

Table 6 (continued)

Research Drake U.	Alverno College	James Madison	Northeast Missouri	Yale University
		Functional Skills		Math Proficiency Foreign Language
				Congruence with Yale